

AD-A101 527

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 4/2
19304A MLRS, MISSILE NUMBER BK002, BN007, BN008 ROUND NUMBER V---ETC(U)
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ERADCOM/ASL-DR-1180

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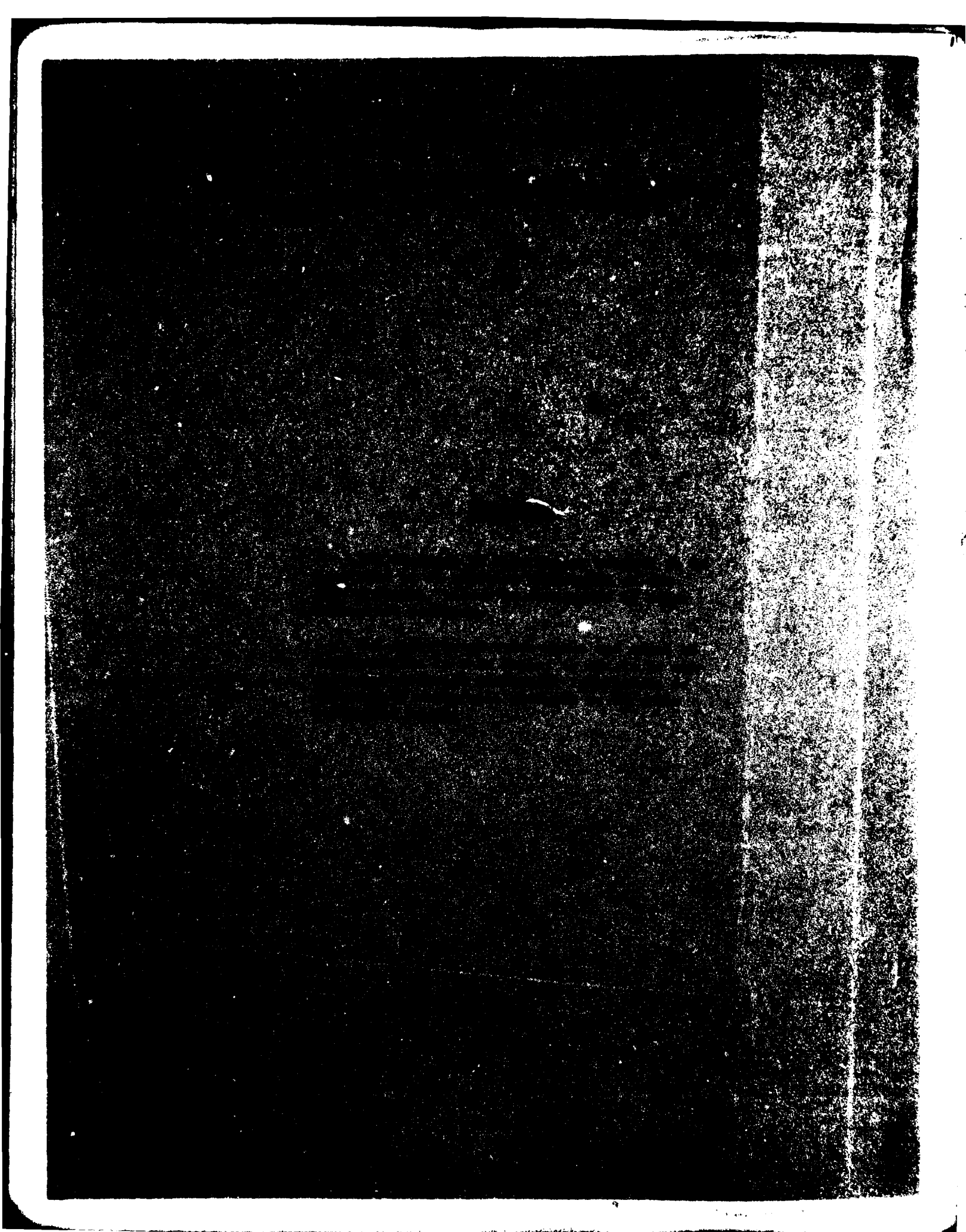
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <u>Meteorological data gathered for the launching of the 19304A MLRS, Missile No. BK002, BN007, BN008, Round No. V-146/MD-13, V-147/MD-14, V-148/MD-15 presented in tabular form.</u>			

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INTRODUCTION

19304A MLRS, Missile Numbers BK002, BN007, and BN008, Round Numbers V-146/MD-13, V-147/MD-14, and V-148/MD-15, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1511:00, 1511:05, and 1511:10 MDT, 26 May 1981. The scheduled launch times were 1400:00, 1400:04.5, and 1400:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pilot observations at:

SITE AND ALTITUDE

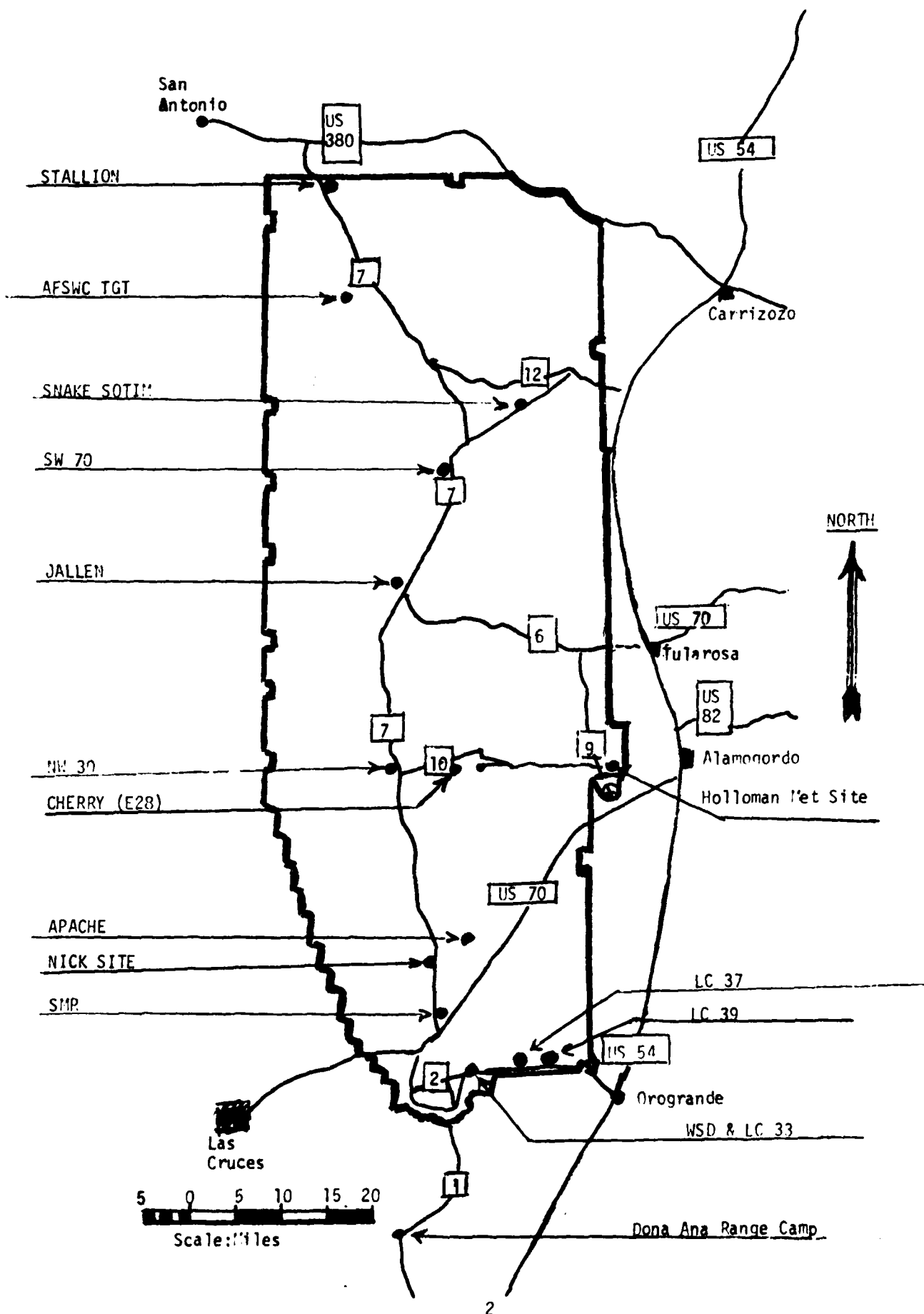
LC-33	2 KM
SMR	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1100	MDT
WSD	1200	MDT
LC-37	1300	MDT
WSD	1511	MDT

[illegible]



PROJECT SURFACE OBSERVATION

TABLE <u>1</u>		STATION <u>LC-33</u>							
DATE <u>26</u> <u>MAY</u> <u>1981</u>		X = <u>484,982.64</u> Y = <u>185,957.73</u> H = <u>3983.00</u>							
TIME <u>1511</u>									
TIME M D Y	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION degs In	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1511	875.2	32.5	4.8	18	991	320	08		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT	
	4	AC	16,500	2	CI	25,000	

PSYCHROMETRIC COMPUTATION

TIME: MDT	1511	
DRY BULB TEMP.	32.5	
WET BULB TEMP.	15.9	
WET BULB DEPR.	16.6	
DEW POINT	4.8	
RELATIVE HUMID.	18	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X435,977.22 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	288	13	T-30	295	10	T-30	292	14
T-20	278	12	T-20	285	10	T-20	287	11
T-10	273	10	T-10	282	09	T-10	283	12
T0.0	267	10	T0.0	282	07	T0.0	289	11
T+10	268	10	T+10	266	08	T+10	273	10

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	295	10	T-30	294	10
T-20	288	09	T-20	289	08
T-10	291	06	T-10	285	09
T0.0	318	07	T0.0	278	08
T+10	297	06	T+10	290	08

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	284	10	T-30	288	10
T-20	285	09	T-20	284	11
T-10	280	09	T-10	282	10
T0.0	287	09	T0.0	280	10
T+10	287	10	T+10	288	09

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 26 May 1981

SITE: LC-33
 TIME: 1511 MDT
 WSTM COORDINATES:
 X= 485,135.76
 Y= 185,919.24
 H= 3988.57

SITE: SMR
 TIME: 1511 MDT
 WSTM COORDINATES:
 X= 472,444.85
 Y= 213,781.96
 H= 4000.99

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	320	08	SURFACE		
150	298	10	150		
210	289	08	210		DATA INVALID
270	298	06	270		
330	264	04	330		DUE TO TRACKING
390	271	07	390		
500	263	05	500		ERROR
650	260	06	650		
800	264	06	800		
950	264	07	950		
1150	251	09	1150		
1350	253	06	1350		
1550	255	09	1550		
1750	242	09	1750		
2000	239	11	2000		

Data obtained from RAPTS T-9 Tracking Pilot-Balloon Observation.

AIMING AND T-TIME COMPUTER MET MESSAGES
26 May 1981LC-37 1100 MDT
METCM1324063
261700124876

00151003	30360876
01078005	30110866
02021006	29770841
03040006	29380803
04627006	28890758
05506009	28450714
06473012	27980672

WSD 1200 MDT
METCM1324064
261800122877

00142005	30370877
01285010	30230868
02165003	29910843
03157005	29530805
04184002	29040760
05063004	28540716
06580006	28080674

LC-37 1300 MDT
METCM1324063
261900124875

00213002	30430875
01164004	30190865
02000000	29870840
03407004	29480803
04428010	28960757
05452013	28490714
06380010	28010672

WSD 1511 MDT
METCM1324064
262120122875

00533010	30660875
01487017	30520865
02508013	30200841
03480013	29760804
04467014	29220759
05458014	28710715
06458013	28230674

STATION ALTITUDE 4051.37 FEET MSL
26 MAY 61 1100 HRS MDT
ASCENSION NO. 104

SIGNIFICANT LEVEL DATA
1400100104
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
875.5	4051.4	29.5	.2	15.0
868.2	4294.8	26.8	4.0	23.0
850.0	4005.8	24.5	3.2	25.0
760.4	7729.1	16.5	-7	31.0
745.9	8592.5	14.1	-1.9	33.0
700.0	10338.8	9.6	-4.4	37.0
664.8	11735.9	5.5	-0.1	43.0
619.6	13606.6	-1.0	-7.8	60.0
608.2	14094.0	-1.3	-0.6	67.0
593.0	14757.7	-1.4	-9.5	54.0
557.8	16354.8	-3.5	-23.7	19.0
549.2	16758.9	-3.1	-10.6	29.0
532.2	17577.0	-3.4	-17.5	33.0
500.0	19188.2	-7.4	-19.5	37.0
474.6	20514.5	-11.2	-21.3	43.0
458.6	21379.4	-12.0	-24.0	36.0
428.2	23094.4	-15.6	-26.6	38.0
413.2	23076.3	-17.8	-23.3	62.0
400.0	24773.3	-19.5	-24.4	65.0
395.1	25074.1	-20.6	-25.1	67.0
387.8	25528.2	-20.8	-27.4	55.0
365.7	26946.6	-24.2	-29.7	60.0
350.4	27698.1	-25.6	-32.5	52.0
337.9	28830.2	-28.3	-35.8	48.0
306.8	31085.2	-33.7	-40.5	50.0
300.0	31601.5	-34.9	-42.0	48.0

STATION ALTITUDE 4051.37 FEET, SL
26 MAY 81 1700 HRS MDZ
ASCENSION NO. 104

UPPER AIR DATA
1460180104
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) SPEED KNOTS	INDEX OF REFRACTION
4051.4	875.5	29.5	15.0	1005.1	678.0	85.0	1.000250
4500.0	862.0	26.0	23.7	1000.3	675.0	50.0	1.000257
5000.0	847.2	24.2	25.2	989.0	673.0	36.5	1.000253
5500.0	832.4	22.8	26.3	970.5	671.5	23.8	1.000249
6000.0	817.8	21.4	27.3	964.1	669.7	16.3	1.000245
6500.0	803.5	20.0	28.4	951.9	668.0	13.3	1.000241
7000.0	789.5	18.6	29.5	939.9	666.4	14.2	1.000237
7500.0	775.6	17.1	30.5	923.1	664.7	7.0	1.000234
8000.0	761.9	15.7	31.6	910.2	663.1	33.7	1.000230
8500.0	748.4	14.4	32.8	894.3	661.5	33.5	1.000226
9000.0	734.9	13.0	33.9	892.2	659.9	31.8	1.000222
9500.0	721.7	11.8	35.1	880.2	658.4	29.8	1.000219
10000.0	708.7	10.5	36.2	868.3	656.9	26.7	1.000215
10500.0	695.0	9.1	37.7	850.7	655.3	27.3	1.000212
11000.0	683.1	7.7	39.8	845.5	653.8	27.0	1.000208
11500.0	670.6	6.2	42.0	834.4	651.9	26.3	1.000205
12000.0	658.2	4.8	45.4	823.8	650.0	25.9	1.000202
12500.0	646.0	2.8	49.9	813.5	647.9	25.5	1.000200
13000.0	633.9	1.1	54.5	803.5	645.9	25.1	1.000197
13500.0	622.1	-6.6	59.0	793.6	643.8	24.8	1.000194
14000.0	610.4	-12.2	65.6	780.2	643.1	24.9	1.000193
14500.0	598.9	-14.4	59.0	760.0	642.3	24.9	1.000187
15000.0	587.5	-11.7	48.7	752.8	642.4	24.8	1.000181
15500.0	576.4	-2.4	37.7	740.6	641.5	24.7	1.000175
16000.0	565.4	-3.0	26.8	728.6	640.6	24.7	1.000169
16500.0	554.7	-3.4	22.6	715.7	640.1	25.0	1.000165
17000.0	544.1	-3.2	30.2	701.5	640.4	26.0	1.000164
17500.0	533.8	-3.4	32.6	688.5	640.2	26.7	1.000161
18000.0	523.6	-4.5	34.1	676.0	639.9	27.5	1.000159
18500.0	513.5	-5.7	35.3	666.2	637.5	26.2	1.000156
19000.0	503.7	-6.9	36.5	650.4	636.0	24.8	1.000154
19500.0	493.9	-8.3	38.4	649.0	634.3	30.1	1.000151
20000.0	484.3	-9.7	40.7	639.9	632.8	30.8	1.000149
20500.0	474.9	-11.2	42.9	630.4	630.9	30.2	1.000147
21000.0	465.6	-11.6	39.1	619.7	630.2	30.0	1.000143
21500.0	456.4	-12.3	36.1	609.0	629.5	29.7	1.000140
22000.0	447.4	-13.3	35.7	599.3	628.2	29.5	1.000138
22500.0	438.5	-14.4	37.3	589.9	626.9	29.2	1.000136
23000.0	429.8	-15.4	37.9	580.6	625.6	28.9	1.000133
23500.0	421.2	-16.6	49.8	571.0	624.2	28.5	1.000132

STATION ALTITUDE 4051.37 FEET ASL
26 MAY 81 1100 HRS MDT
ASCENSION NO. 100

UPPER AIR DATA
1460160104
LC-37

GEOLITIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

TABLE 7 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (TN)	SPEED KNOTS	
24000.0	412.8	-17.9	-23.3	62.1	562.8	622.7	283.3	25.5	1.000131
24500.0	404.5	-18.9	-24.0	64.0	553.8	621.4	282.6	23.0	1.000128
25000.0	396.3	-20.3	-24.9	66.5	545.6	619.7	282.7	19.9	1.000126
25500.0	388.2	-20.8	-27.3	55.7	535.6	619.1	282.8	18.9	1.000123
26000.0	380.3	-21.9	-29.2	56.7	527.1	617.7	282.9	18.6	1.000121
26500.0	372.5	-23.1	-29.0	58.4	518.8	616.2	281.6	19.9	1.000119
27000.0	364.9	-24.3	-28.9	59.4	510.5	614.7	280.1	21.7	1.000117
27500.0	357.3	-25.2	-31.8	54.1	501.9	613.5	277.8	22.3	1.000114
28000.0	349.0	-26.3	-33.4	50.9	493.7	612.2	275.3	22.4	1.000112
28500.0	342.6	-27.5	-34.9	49.2	485.8	610.7	273.9	23.4	1.000110
29000.0	335.5	-28.7	-36.2	48.2	477.9	609.2	272.9	24.6	1.000108
29500.0	328.3	-29.9	-37.2	48.6	470.1	607.7	273.9	25.5	1.000106
30000.0	321.4	-31.1	-38.2	49.0	462.4	606.2	275.5	26.2	1.000104
30500.0	314.6	-32.3	-39.3	49.5	454.9	604.7	279.4	25.8	1.000103
31000.0	307.9	-33.5	-40.3	49.9	447.5	603.2			1.000101
31500.0	301.3	-34.7	-41.7	48.4	440.1	601.7			1.000099

STATION ALTITUDE 4011.7 FEET MSL
26 MAY 41 1100 HRS EDT
ASCENSION, NO. 104

MANDATORY LEVELS
1460160104
LC-37

GEODTIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4902.	24.5	3.2	25.	39.0	3.8
800.0	6328.	19.6	1.0	29.	15.0	0.5
750.0	8433.	14.5	-1.7	33.	335.0	5.1
700.0	10329.	9.6	-4.4	37.	281.0	10.6
650.0	12325.	5.4	-6.4	48.	256.7	15.1
600.0	14433.	-1.4	-8.1	60.	249.9	23.0
550.0	16099.	-5.1	-19.0	28.	255.0	14.3
500.0	19151.	-7.4	-19.5	37.	297.5	10.1
450.0	21821.	-13.0	-24.7	37.	295.9	24.8
400.0	24732.	-19.5	-24.4	65.	282.7	21.4
350.0	27945.	-26.3	-33.4	51.	275.4	22.4
300.0	31538.	-34.9	-42.0	40.		

STATION ALTITUDE 3989.00 FEET MSL
26 MAY 81 1200 HRS MDT
ASCENSION: 110. 359

SIGNIFICANT LEVEL DATA
1460020359
WHITE SANDS

GEOULTIC COORDINATES
32.40043 LAT UEG
106.37033 LON UEG

TABLE 9

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
877.4	3989.0	29.5	2.7	16.0
850.0	4000.6	25.7	1.1	20.0
788.6	7049.5	19.7	-1.4	24.0
700.0	10357.7	9.5	-4.8	36.0
607.4	14160.1	-2.2	-8.8	52.0
580.8	14733.2	-5.9	-12.5	41.0
564.2	16056.3	-1.7	-17.4	29.0
547.6	16566.9	-2.7	-14.1	41.0
500.0	19228.5	-7.1	-20.6	33.0
430.0	23030.4	-16.3	-25.7	44.0
400.0	24807.1	-20.5	-25.0	67.0
393.4	25211.8	-21.5	-24.6	76.0
345.4	28332.4	-27.5	-34.5	51.0
300.0	31614.8	-35.8	-43.0	47.0

STATION ALTITUDE 3939.00 FEET MSL
26 MAY 81 1200 HRS NDT
ASCENSION I.O. 059

UPPER AIR DATA
1460020059
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	SPEED OF WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3939.0	877.4	29.5	19.0	1006.7	676.8	60.0	5.1	1.000255
4000.0	877.1	29.5	19.0	1006.5	676.8	60.1	5.1	1.000255
4500.0	862.1	27.4	19.1	996.2	676.4	83.1	5.2	1.000251
5000.0	847.3	25.4	20.2	985.6	674.2	86.1	5.3	1.000248
5500.0	832.6	24.0	21.1	973.2	672.0	88.9	5.4	1.000244
6000.0	818.1	22.6	22.0	960.9	671.0	91.5	5.6	1.000240
6500.0	803.0	21.2	23.0	948.7	669.3	91.6	4.8	1.000237
7000.0	790.0	19.8	23.9	936.8	667.7	90.0	3.8	1.000233
7500.0	775.9	18.3	25.6	925.0	666.0	88.8	3.1	1.000230
8000.0	762.1	16.9	27.4	913.3	664.2	85.3	2.4	1.000227
8500.0	748.5	15.2	29.3	901.6	662.4	71.7	2.2	1.000224
9000.0	735.1	13.7	31.1	890.5	660.6	53.9	2.6	1.000221
9500.0	722.3	12.1	32.9	879.4	658.8	40.4	3.1	1.000218
10000.0	709.1	10.6	34.7	868.5	657.0	26.8	3.6	1.000214
10500.0	696.3	9.1	36.6	857.3	655.3	6.9	4.0	1.000211
11000.0	683.4	7.9	38.7	845.3	653.8	340.7	4.8	1.000208
11500.0	671.9	6.6	40.8	833.5	652.3	267.9	7.2	1.000205
12000.0	660.4	5.3	42.9	821.9	650.8	207.9	11.0	1.000202
12500.0	648.2	4.0	45.0	810.4	649.3	279.3	14.8	1.000199
13000.0	636.3	2.8	47.1	798.2	647.8	273.7	17.0	1.000196
13500.0	624.5	1.5	49.2	786.1	646.3	269.5	19.2	1.000192
14000.0	611.9	.2	51.3	777.2	644.7	264.2	19.4	1.000189
14500.0	599.6	.5	53.4	764.8	643.8	259.9	19.6	1.000185
15000.0	588.3	.9	55.5	751.8	643.2	257.1	18.4	1.000179
15500.0	577.2	-1.3	57.6	738.7	642.8	257.0	16.4	1.000175
16000.0	566.3	-1.6	59.7	725.8	642.3	257.1	14.5	1.000170
16500.0	555.5	-2.2	61.8	713.5	641.6	253.2	12.8	1.000168
17000.0	545.0	-2.9	63.9	701.7	640.8	262.0	11.1	1.000167
17500.0	534.6	-3.9	66.0	690.7	639.7	267.2	11.0	1.000163
18000.0	524.3	-4.9	68.1	679.9	638.5	272.7	11.3	1.000160
18500.0	514.3	-5.7	70.2	669.3	637.4	261.0	12.0	1.000157
19000.0	504.4	-6.7	72.3	658.6	636.2	267.0	13.1	1.000153
19500.0	494.6	-7.8	74.4	648.7	634.9	293.6	13.8	1.000151
20000.0	484.9	-9.0	76.5	638.9	633.5	277.1	14.2	1.000148
20500.0	475.4	-10.2	78.6	629.3	632.0	293.6	15.8	1.000146
21000.0	465.1	-11.4	80.7	619.3	630.6	293.6	17.7	1.000143
21500.0	455.9	-12.6	82.8	610.4	629.1	291.2	20.5	1.000141
22000.0	447.0	-13.8	84.9	601.3	627.6	263.3	23.5	1.000139
22500.0	439.1	-15.0	87.0	592.2	626.1	267.1	25.5	1.000137
23000.0	430.5	-16.2	89.1	583.4	624.7	263.0	27.1	1.000134

STATION ALTITUDE 3989.00 FEET MSL
26 MAY 81 1200 HRS MDT
ASCENSION NO. 359

UNDEP AIR DATA
1460020354
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.0	-17.4	50.1	574.2	623.2	252.0	27.7	1.000132
24000.0	413.4	-18.6	56.6	565.3	621.8	260.2	26.0	1.000131
24500.0	405.0	-19.8	63.0	556.5	620.4	277.8	26.4	1.000129
25000.0	396.8	-21.0	71.3	547.8	618.9	277.2	26.5	1.000127
25500.0	388.7	-22.1	73.7	538.9	617.6	276.6	26.6	1.000125
26000.0	380.7	-23.0	69.7	529.0	616.3	277.1	26.5	1.000122
26500.0	372.8	-24.0	65.7	520.9	615.1	277.3	26.4	1.000120
27000.0	365.1	-24.9	61.7	512.2	613.9	274.5	25.5	1.000117
27500.0	357.6	-25.9	57.7	503.6	612.7	271.7	24.9	1.000115
28000.0	350.2	-26.9	53.7	495.2	611.5	269.3	25.1	1.000113
28500.0	342.9	-27.9	50.8	487.0	610.2	268.8	25.2	1.000110
29000.0	335.6	-29.2	50.2	479.1	608.6	270.2	25.2	1.000108
29500.0	328.5	-30.5	49.6	471.4	607.0	271.8	25.8	1.000107
30000.0	321.5	-31.7	49.0	463.8	605.4	273.4	26.5	1.000105
30500.0	314.7	-33.0	48.4	456.4	603.8			1.000103
31000.0	308.0	-34.2	47.7	449.1	602.2			1.000101
31500.0	301.5	-35.5	47.1	441.9	600.6			1.000099

STATION ALTITUDE 3989.00 FEET MSL
26 MAY AT 1200 HRS EDT
ASCENSION NO. 359

LABORATORY LEVELS
1460020359
WHITE SANDS

GEODLTIC COORDINATES
32.40043 LAT DEG
106.57033 LON DEG

TABLE 11

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4900.	25.7	1.1	20.	85.0	5.3
800.0	6038.	20.8	-7.9	23.	91.4	4.5
750.0	8449.	15.4	-2.5	29.	73.7	2.2
700.0	10347.	9.5	-4.8	30.	15.9	3.9
650.0	12547.	4.4	-6.6	44.	281.3	13.7
600.0	14465.	-5.5	-10.3	47.	259.2	19.6
550.0	16741.	-2.6	-14.5	39.	260.5	11.9
500.0	19201.	-7.1	-20.3	33.	291.0	13.5
450.0	21865.	-13.5	-24.0	41.	289.7	22.8
400.0	24755.	-20.5	-25.0	67.	277.4	20.4
350.0	27967.	-26.9	-33.4	54.	269.3	25.1
300.0	31551.	-35.8	-43.0	47.		

GEODLTIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

SIGNIFICANT LEVEL DATA
14601.0105
LC-37

TABLE 12

STATION ALTITUDE 4051.37 FEET MSL
26 MAY 61 1300 HRS MDT
ASCENSION NO. 105

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
874.5	4051.4	30.4	16.0
870.2	4195.2	28.0	20.0
850.0	4075.0	25.6	21.0
801.4	6557.8	20.6	24.0
782.0	7249.3	18.2	25.0
744.6	8617.7	14.4	31.0
725.6	9332.5	12.6	32.0
716.6	9676.0	11.7	34.0
700.0	10317.9	9.8	35.0
663.0	11787.8	5.1	44.0
619.4	13597.0	.0	54.0
585.6	15072.9	-8.8	31.0
577.2	15452.4	-5	30.0
568.8	15837.0	-1.6	31.0
542.8	17058.4	-3.1	33.0
500.0	19175.8	-8.4	34.0
469.8	20755.2	-12.0	42.0
454.8	21569.0	-14.1	56.0
446.4	22034.1	-14.8	47.0
430.8	22017.1	-16.6	45.0
415.4	23815.2	-18.0	50.0
400.0	24740.3	-20.4	63.0
393.6	25132.7	-21.5	71.0
379.2	26034.6	-23.0	71.0
344.8	28304.7	-28.3	59.0
325.0	29691.0	-31.9	56.0
300.0	31533.4	-37.1	56.0

STATION ALTITUDE 4051.37 FEET ASL
26 MAY 81 1300 HRS MDT
ASCENSION NO. 105

UPPER AIR DATA
1460100105
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	RELAT. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION.
4051.4	374.5	30.4	16.0	1.070.6	679.8	120.0	1.9	1.000252
4500.0	861.1	26.9	20.4	0.96.5	675.9	142.5	1.4	1.000253
5000.0	840.3	25.2	21.2	0.85.1	674.0	164.0	1.3	1.000249
5500.0	831.6	23.7	22.1	0.72.9	672.3	216.2	1.7	1.000245
6000.0	817.2	22.3	23.0	0.60.9	670.5	229.5	2.6	1.000241
6500.0	803.9	20.8	23.9	0.49.1	668.8	229.5	4.0	1.000237
7000.0	789.9	19.1	24.6	0.38.1	666.8	230.8	5.5	1.000233
7500.0	775.9	17.5	25.1	0.26.5	665.0	236.7	7.6	1.000230
8000.0	761.3	16.1	26.3	0.14.4	663.4	240.9	9.7	1.000227
8500.0	747.7	14.7	28.3	0.02.5	661.8	247.7	12.1	1.000224
9000.0	734.4	13.4	30.5	0.00.4	660.3	251.5	12.9	1.000221
9500.0	721.2	12.2	31.5	0.00.4	658.9	252.4	12.7	1.000217
10000.0	708.2	10.7	33.0	0.00.4	657.2	244.1	11.6	1.000214
10500.0	695.3	9.2	34.5	0.00.4	655.4	237.6	11.4	1.000211
11000.0	682.6	7.6	36.1	0.00.4	653.5	233.7	11.8	1.000208
11500.0	670.1	6.0	39.2	0.00.4	651.8	235.0	12.4	1.000205
12000.0	657.7	4.5	42.2	0.00.4	649.9	237.9	13.2	1.000202
12500.0	645.5	3.1	45.2	0.00.4	648.2	242.5	13.5	1.000199
13000.0	633.5	1.7	47.9	0.00.4	646.5	250.7	13.3	1.000196
13500.0	621.7	0.3	50.7	0.00.4	644.8	259.1	13.3	1.000193
14000.0	610.0	-0.2	53.5	0.00.4	643.2	263.0	12.2	1.000188
14500.0	598.5	-0.5	57.7	0.00.4	641.4	267.1	10.9	1.000182
15000.0	587.2	-0.8	62.1	0.00.4	639.2	263.5	9.5	1.000177
15500.0	576.2	-0.6	67.2	0.00.4	637.7	254.7	8.1	1.000173
16000.0	565.3	-1.8	72.4	0.00.4	635.5	251.3	8.0	1.000170
16500.0	554.5	-2.4	77.2	0.00.4	633.3	252.8	8.7	1.000167
17000.0	544.0	-3.0	82.3	0.00.4	631.9	255.9	9.6	1.000164
17500.0	533.6	-4.2	87.0	0.00.4	630.4	259.9	10.8	1.000162
18000.0	523.3	-5.5	91.3	0.00.4	629.2	264.0	11.7	1.000159
18500.0	513.3	-6.7	95.0	0.00.4	627.5	271.7	11.7	1.000156
19000.0	503.4	-8.0	98.0	0.00.4	625.5	279.4	11.8	1.000153
19500.0	493.6	-9.1	100.0	0.00.4	623.5	282.2	13.3	1.000151
20000.0	484.0	-10.3	102.0	0.00.4	621.6	283.5	15.0	1.000149
20500.0	474.6	-11.4	104.0	0.00.4	619.5	285.3	17.5	1.000146
21000.0	465.2	-12.6	106.0	0.00.4	617.5	281.0	21.2	1.000144
21500.0	456.1	-13.9	108.0	0.00.4	615.5	280.4	24.8	1.000143
22000.0	447.0	-14.7	110.0	0.00.4	613.5	279.7	26.9	1.000139
22500.0	438.1	-15.7	112.0	0.00.4	611.5	278.9	28.9	1.000137
23000.0	429.4	-16.7	114.0	0.00.4	609.5	275.6	29.9	1.000134
23500.0	420.7	-17.5	116.0	0.00.4	607.5	272.6	30.8	1.000132

STATION ALTITUDE 4051.37 FEET MSL
26 MAY 81 1300 HRS 101
ASCENSION NO. 105

UPPER AIR DATA
1460100105
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TR)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	412.3	-19.5	52.6	563.0	621.9	270.8	30.3	1.000130
24500.0	403.9	-19.8	52.6	555.0	620.3	269.2	29.9	1.000128
25000.0	395.8	-21.1	68.3	546.0	618.7	269.6	30.2	1.000126
25500.0	387.7	-22.1	71.0	537.6	617.5	269.9	30.5	1.000124
26000.0	379.7	-22.9	71.0	528.4	616.4	270.0	31.2	1.000122
26500.0	371.9	-24.1	68.5	519.0	615.0	270.2	31.7	1.000119
27000.0	364.2	-25.3	65.9	511.5	613.5	270.4	31.7	1.000117
27500.0	356.6	-26.4	63.3	503.3	612.1	270.7	31.7	1.000115
28000.0	349.2	-27.6	60.6	495.2	610.6	271.4	31.8	1.000113
28500.0	341.9	-28.8	59.6	487.3	609.1	272.0	31.5	1.000111
29000.0	334.7	-30.1	57.5	479.6	607.4	272.1	29.3	1.000109
29500.0	327.7	-31.4	56.4	472.0	605.8	272.0	27.6	1.000107
30000.0	320.7	-32.8	56.0	464.6	604.1	271.3	27.6	1.000105
30500.0	313.8	-34.2	56.0	457.3	602.3			1.000103
31000.0	307.0	-35.6	56.0	450.2	600.5			1.000101
31500.0	300.4	-37.0	56.0	443.1	598.7			1.000100

STATION ALTITUDE 4251.37 FEET ASL
 26 MAY 81 1300 HRS MDT
 ASCENSION NO. 105

MANDATORY LEVELS
 1460100105
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4871.	25.6	1.7	21.	172.9	1.2
800.0	6602.	20.4	-8	24.	229.6	4.3
750.0	8410.	15.0	-2.4	30.	246.7	11.7
700.0	10308.	9.8	-4.9	35.	239.0	11.3
650.0	12305.	3.6	-6.6	47.	239.0	13.7
600.0	14417.	-5	-12.1	41.	266.4	11.1
550.0	16693.	-2.7	-16.9	32.	253.4	8.9
500.0	19149.	-8.4	-21.4	34.	281.1	12.1
450.0	21800.	-14.5	-22.4	51.	279.9	26.2
400.0	24699.	-20.4	-25.6	63.	269.4	30.1
350.0	27899.	-27.5	-32.7	61.	271.3	31.8
300.0	31470.	-37.1	-42.0	50.		

STATION ALTITUDE 3989.00 FEET MSL
26 MAY 81 181 HRS NOT
ASCENSION NO. 369

SIGNIFICANT LEVEL DATA
1460020360
WHITE SANDS

GEODLTIC COORDINATES
32.40043 LAT UEG
106.37033 LON UEG

TABLE 15

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
675.0	3009.0	32.2	5.2	16.0
850.0	4038.5	28.4	7.6	27.0
770.4	7659.8	19.4	1.9	31.0
700.0	10328.9	11.4	-2.8	37.0
635.8	12034.1	3.6	-5.8	50.0
605.3	14237.6	-1.3	-7.1	60.0
568.0	15001.3	-3.6	-16.1	37.0
543.6	17044.3	-2.7	-15.0	38.0
500.0	19203.2	-8.0	-19.6	38.0
435.4	22684.7	-16.3	-24.7	48.0
420.6	23538.2	-18.2	-20.8	60.0
400.0	24768.8	-20.0	-24.7	66.0
398.0	25510.4	-21.4	-25.4	70.0
370.2	26130.4	-22.4	-26.4	58.0
300.0	31578.3	-36.2	-44.2	43.0

STATION ALTITUDE 3489.00 FEET MSL
26 MAY 81 151 HRS MDT
ASCENSION NO. 360

UNDER AIR DATA
1460020300
WHITE SATIDS

GEOMETRIC ALTITUDE 3489.00 FEET MSL
26 MAY 81 151 HRS MDT
ASCENSION NO. 360

TABLE 16

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3489.0	875.0	32.2	3.2	16.0	994.9	681.9	300.0	9.9	1.000253
4000.0	874.7	32.2	3.3	16.1	994.7	681.0	299.0	9.9	1.000253
4500.0	859.9	29.9	6.3	22.6	984.3	679.6	293.1	10.4	1.000259
5000.0	845.2	27.4	7.3	27.2	973.0	677.5	287.0	11.0	1.000260
5500.0	830.6	26.3	6.3	27.9	962.1	675.0	281.0	11.6	1.000255
6000.0	810.3	24.7	5.3	28.6	950.8	673.7	276.0	12.4	1.000250
6500.0	802.2	23.1	4.3	29.4	939.6	671.9	272.7	13.3	1.000245
7000.0	786.3	21.5	3.2	30.1	928.0	670.0	268.3	13.6	1.000241
7500.0	774.7	19.9	2.2	30.8	917.7	668.1	264.1	13.8	1.000236
8000.0	761.0	18.4	1.3	31.8	906.4	666.3	260.7	14.0	1.000232
8500.0	747.5	16.9	.5	32.9	895.0	664.5	259.1	13.8	1.000228
9000.0	734.2	15.4	-.4	34.0	883.7	662.8	257.4	13.7	1.000224
9500.0	721.1	13.9	-1.2	35.1	872.7	661.0	255.8	13.6	1.000220
10000.0	708.3	12.4	-2.1	36.3	861.8	659.2	255.0	13.4	1.000216
10500.0	695.6	10.9	-2.9	37.9	850.8	657.5	254.9	13.2	1.000213
11000.0	682.9	9.4	-3.4	40.3	839.7	655.7	254.9	12.9	1.000210
11500.0	670.4	7.9	-3.9	42.8	828.0	653.9	254.0	12.7	1.000207
12000.0	658.1	6.4	-4.6	45.3	816.1	652.2	254.0	13.0	1.000203
12500.0	646.1	4.9	-5.2	47.8	807.5	650.4	253.2	13.2	1.000200
13000.0	634.2	3.4	-5.9	50.5	797.0	648.6	252.4	13.5	1.000197
13500.0	622.4	1.9	-6.3	54.3	786.4	646.9	251.0	13.8	1.000194
14000.0	610.7	.4	-6.8	58.2	776.0	645.1	249.4	14.1	1.000191
14500.0	599.3	-.8	-7.4	56.4	765.0	643.6	250.1	13.5	1.000187
15000.0	587.9	-1.8	-11.0	49.5	753.5	642.3	252.1	12.5	1.000181
15500.0	576.8	-2.8	-13.7	42.5	742.2	641.0	255.1	11.7	1.000176
16000.0	565.8	-3.5	-16.0	37.1	730.2	640.1	257.4	11.3	1.000172
16500.0	555.1	-3.1	-15.5	37.5	715.3	640.0	255.3	11.9	1.000169
17000.0	544.5	-2.7	-15.1	38.0	700.6	641.1	255.0	12.5	1.000166
17500.0	534.1	-3.8	-16.0	38.0	690.0	639.7	258.2	13.1	1.000163
18000.0	523.8	-5.0	-17.1	38.0	679.9	638.3	263.2	13.7	1.000160
18500.0	513.8	-6.3	-19.2	38.0	670.0	636.8	267.9	14.5	1.000157
19000.0	503.9	-7.5	-19.3	38.0	660.2	635.3	268.9	15.2	1.000154
19500.0	494.1	-9.7	-20.2	39.9	650.3	633.8	268.1	16.2	1.000152
20000.0	484.4	-9.9	-20.8	40.3	640.5	632.4	268.0	17.5	1.000149
20500.0	474.9	-11.1	-21.5	41.7	630.7	630.9	267.3	19.5	1.000147
21000.0	465.5	-12.3	-22.2	43.2	621.2	629.5	267.7	21.5	1.000144
21500.0	456.4	-13.5	-22.9	44.6	611.9	628.0	273.2	23.6	1.000142
22000.0	447.4	-14.7	-23.7	46.0	602.5	626.6	276.2	25.2	1.000139
22500.0	438.6	-15.9	-24.4	47.5	593.4	625.1	276.0	26.4	1.000137
23000.0	429.9	-17.0	-25.9	50.8	584.1	623.8	279.1	26.2	1.000136

STATION ALTITUDE 3389.00 FEET ASL
26 MAY 61 1511 HRS EDT
ASCENSION NO. 300

UPPER AIR DATA
1400020300
WHTF 54005

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 16 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TH)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.3	-10.1	79.6	574.8	622.5	277.5	26.2	1.000135
24000.0	412.7	-10.9	74.7	564.9	621.5	273.4	26.7	1.000132
24500.0	404.4	-19.6	69.1	555.2	620.6	268.3	27.2	1.000129
25000.0	396.2	-20.4	67.2	545.8	619.5	263.3	27.9	1.000126
25500.0	388.2	-21.4	69.9	536.7	618.4	264.0	28.3	1.000124
26000.0	380.2	-22.2	60.5	527.5	617.4	263.5	28.8	1.000121
26500.0	372.3	-23.3	57.0	518.9	615.9	268.3	29.4	1.000119
27000.0	364.5	-24.6	55.6	510.6	614.3	269.1	29.1	1.000117
27500.0	356.8	-25.9	54.2	502.4	612.7	263.3	28.4	1.000114
28000.0	349.3	-27.1	52.9	494.4	611.2	263.1	27.2	1.000112
28500.0	342.0	-28.4	51.5	486.6	609.6	268.9	26.3	1.000110
29000.0	334.8	-29.7	50.1	478.8	608.0	268.5	25.9	1.000108
29500.0	327.7	-30.9	48.7	471.2	606.4	263.0	27.0	1.000106
30000.0	320.8	-32.2	47.3	463.7	604.8	267.0	27.9	1.000105
30500.0	314.1	-33.5	46.0	456.4	603.2	263.3	28.5	1.000103
31000.0	307.5	-34.7	44.6	449.2	601.6			1.000101
31500.0	301.7	-36.0	43.2	442.1	600.0			1.000099

STATION ALTITUDE 3989.00 FEET ASL
26 MAY 61 1511 HRS MDT
ASCENSION NO. 360

TEMPERATURE LEVELS
1460020300
WHITE SANDS

GEOLOGIC COORDINATES
32.40043 LAT DEG
106.57033 LON DEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FELT	AIR DEGREES	OF WPTNT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4835.	28.4	7.6	27.	289.0	10.7
800.0	5503.	22.9	4.1	29.	272.0	13.4
750.0	8407.	17.2	.6	33.	259.4	13.9
700.0	10319.	11.4	-2.8	37.	255.0	13.3
650.0	12329.	5.4	-5.0	47.	253.4	13.2
600.0	14452.	-.8	-8.2	57.	250.0	13.6
550.0	16717.	-2.9	-15.3	38.	254.4	12.2
500.0	19176.	-8.0	-19.8	38.	269.3	15.5
450.0	21831.	-14.3	-23.5	46.	275.4	24.8
400.0	24727.	-20.0	-24.7	66.	265.6	27.6
350.0	27936.	-27.0	-33.7	53.	269.1	27.2
300.0	31515.	-36.2	-44.2	43.		

DATE
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